

s. s. "Devonia" encountered thin field ice in N. 44° 20', W. 53° 00', this being the only field ice noted during the month. The entire absence of icebergs, and the almost entire absence of field ice, over and near the Banks of Newfoundland during March, 1889, constitutes a noteworthy and very unusual feature, as during the corresponding month of the last seven years icebergs and field ice have been reported in large quantities in that region. During this period the average southern limit of ice for March has been about N. 41° and the average eastern limit about W. 44°.

OCEAN FOG IN MARCH.

Fog at Saint Johns, N. F., 1st, 2d, 3d, 4th, 6th, 7th, 8th, 20th, and 26th.

The limits of fog-belts west of the fortieth meridian are shown on chart i by dotted shading. In the vicinity of the Banks of Newfoundland fog was reported on seventeen days, as compared with thirteen days for February, 1889, and sixteen days for March, 1888. Between the fifty-fifth and sixty-fifth meridians fog was reported on twelve days, as compared with four days for February, 1889, and six days for March, 1888. To the westward of the sixty-fifth meridian fog was reported on seven days, as compared with three days for February, 1889, and six days for March, 1888. In each of the regions referred to the development of fog attended the approach or passage of areas of low barometric pressure, and the unusual

frequency of its occurrence may be attributed to the numerous and energetic storms which traversed the western portion of the ocean during the month.

The following are limits of fog-areas on the north Atlantic Ocean during March, 1889, as reported by shipmasters:

Date.	Entered.			Cleared.			Date.	Entered.			Cleared.		
	Lat. N.	Lon. W.		Lat. N.	Lon. W.			Lat. N.	Lon. W.		Lat. N.	Lon. W.	
2-3	44 00	56 00		41 50	63 00		16-17	40 35	65 40		40 50	64 00	
2-3	44 58	53 30		44 10	56 20		16-17	40 28	66 52		40 46	64 00	
2-3	40 09	66 08		39 41	69 39		16-18	40 39	65 30		42 04	58 00	
2-4	45 17	53 21		43 15	61 50		17	40 48	67 00		40 40	69 30	
3-4	40 52	67 50		40 30	69 00		17	41 07	65 55		40 34	70 00	
3-4	42 16	61 05		40 55	68 30		18	42 45	60 50		42 41	62 28	
3-4	43 00	60 00		42 10	63 40		18-19	44 05	52 06		43 06	58 29	
3-4	45 29	47 19		46 28	45 16		17-19	40 40	65 00		39 50	68 10	
4	42 07	52 24		42 53	49 07		18-19	44 10	48 29		43 06	52 16	
4-5	At Halifax, N. S.						19-20	44 39	52 00		43 18	57 57	
6	40 59	63 50		40 57	64 14		19-20	44 54	44 42		43 11	51 10	
6	42 09	51 00		42 00	50 00		20	45 40	46 48		45 02	49 00	
6-7	At Halifax, N. S.						20	43 04	52 57		43 02	54 06	
7-8	43 12	50 00		42 40	52 55		20-21	45 59	43 47		45 45	49 55	
7-8	43 22	48 20		42 43	50 00		25	43 40	50 30		44 50	48 05	
8	44 05	45 22		43 45	46 31		25	44 57	48 52		44 47	49 47	
8-9	47 06	46 26		44 53	51 17		25	35 43	73 50		35 45	73 48	
9	44 00	47 59		43 24	49 40		25-26	42 00	50 30		42 00	51 30	
9	44 40	53 25		45 20	51 00		29	44 50	60 00		44 50	62 00	
9-10	47 00	46 50		45 10	49 20		30	42 21	52 53		42 22	53 15	
9-10	46 30	48 10		47 15	46 00		30-31	42 57	50 40		42 44	52 22	

TEMPERATURE OF THE AIR (expressed in degrees, Fahrenheit).

The distribution of mean temperature over the United States and Canada for March, 1889, is exhibited on chart ii by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departures from the normal are given for regular stations of the Signal Service. The figures opposite the names of the geographical districts in the columns for mean temperature show the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the departure is below the normal and subtracting when above.

The mean temperature was highest over the southern extremity of Florida, and in the lower valleys of the Colorado and Gila rivers, where the values rose above 65°. In Florida south of the thirtieth parallel, along the middle and west Gulf coast, in southwestern Arizona and southeastern California, and at stations in the valley and to the eastward of the San Joaquin River and Tulare Lake, Cal., the mean temperature was above 60°. The mean temperature was lowest north of a line traced through Minnedosa and Winnipeg, Manitoba, and thence eastward to the extreme northern shore of Lake Superior, where the readings were below 25°. Values below 32° were reported north of a line traced irregularly east-southeast from Qu'Appelle, N. W. T., to Lake Ontario, and thence north of east to Cape Breton Island. Within an area extending over adjoining portions of Arizona, New Mexico, Utah, and Colorado the means fell below 35°.

The mean temperature was below the normal south of a line traced from central Arizona eastward to middle Alabama, and thence northeastward to the Atlantic coast in about the latitude of southern Delaware, the greatest departures below the normal being noted in the lower Rio Grande valley, where they exceeded 5°. In all districts north of the line referred to and on the Pacific coast the month was warmer than the average March, the greatest departures above the normal being shown in northwestern Minnesota, northeastern Dakota, and southwestern Manitoba, where they were more than 15°. Over a greater portion of the country north of the fortieth parallel the temperature was 5°, or more, above the normal. On the Pacific coast the departures above the normal were less than 5°, except in the lower valley of the Columbia River.

The following are some of the most marked departures from the normal at the older established Signal Service stations:

Above normal.		Below normal.	
Saint Vincent, Minn.	16.4	Rio Grande City, Tex.	5.5
Bismarck, Dak.	15.2	Jacksonville, Fla.	3.9
Minnedosa, N. W. T.	15.0	Key West, Fla.	3.6
Marquette, Mich.	10.1	Galveston, Tex.	3.0
Portland, Oregon	5.8	Savannah, Ga.	2.7

DEVIATIONS FROM NORMAL TEMPERATURES.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for March, 1889; (4) the departure of the current month from the normal; (5) and the extreme monthly means for March during the period of observation and the years of occurrence:

State and station.	County.	(1) Normal for the month of March.	(2) Length of record.	(3) Mean for March, 1889.	(4) Departure from normal.	(5) Extreme monthly mean temperature for March.			
						Highest.	Year.	Lowest.	Year.
Arkansas.			Years	°	°	°		°	
Lead Hill.....	Boone.....	48.5	7	50.1	+1.6	55.4	1882	45.5	1885
California.									
Sacramento.....	Sacramento.	54.8	36	54.5	-0.3	59.8	1853	48.8	1880
Colorado.									
Fort Lyon.....	Bent.....	41.6	20	43.3	+1.7	47.3	1879	29.6	1867
Connecticut.									
Middletown.....	Middlesex.....	32.2	20	37.0	+4.8	40.7	1871	25.7	1872
Florida.									
Merritt's Island.....	Brevard.....	65.3	6	61.6	-3.7	71.1	1884	61.6	1889
Georgia.									
Forsyth.....	Monroe.....	56.9	15	57.4	+0.5	61.7	1880 '82	51.4	1885
Illinois.									
Peoria.....	Peoria.....	38.3	33	43.1	+4.8	45.8	1871	29.4	1867
Riley.....	McHenry.....	31.3	32	36.2	+4.9	41.7	1878	23.8	1872
Indiana.									
Vevay.....	Switzerland.....	42.6	22	45.9	+3.3	50.7	1878	35.7	1885
Iowa.									
Cresco.....	Howard.....	25.8	17	35.1	+9.3	42.3	1878	19.6	1888
Monticello.....	Jones.....	31.9	35	39.4	+7.5	45.8	1878	23.8	1867
Logan.....	Harrison.....	34.7	15	42.1	+7.4	48.0	1876	28.3	1875
Kansas.									
Lawrence.....	Douglas.....	42.3	25	41.6	-0.7	51.2	1866	34.2	1876
Wellington.....	Sumner.....	43.6	10	46.9	+3.3	49.6	1879	39.0	1883

Deviations from normal temperatures—Continued.

State and station.	County.	(1) Normal for the month of March.	(2) Length of record.	(3) Mean for March, 1889.	(4) Departure from normal.	(5) Extreme monthly mean temperature for March.			
						Highest.	Year.	Lowest.	Year.
Louisiana.		°	Years	°	°	°		°	
Grand Coteau....	Saint Landry	62.1	6	60.4	-1.7	66.2	1884	59.5	1885
Maine.									
Cornish.....	York	28.5	32	33.3	+4.8	36.2	1871	20.7	1863
Maryland.									
Cumberland.....	Allegany	36.8	30	41.9	+5.1	46.0	1878	30.0	1875
Massachusetts.									
Amherst.....	Hampshire	32.6	53	37.1	+4.5	40.5	1871	24.5	1843
Newburyport.....	Essex	32.1	10	36.7	+4.6	36.7	1889	27.0	1885
Somerset.....	Bristol	33.9	16	35.9	+2.0	39.8	1878	28.2	1885
Michigan.									
Kalamazoo.....	Kalamazoo	30.6	13	39.0	+8.4	42.2	1878	22.5	1885
Thornville.....	Lapeer	30.5	12	36.2	+5.7	41.1	1878	21.0	1885
Minnesota.									
Minneapolis.....	Hennepin	24.5	24	34.9	+10.4	43.6	1878	11.6	1867
Montana.									
Fort Shaw.....	Lewis & Clarke	32.5	18	41.8	+9.3	41.8	1889	21.7	1870
New Hampshire.									
Hanover.....	Grafton	27.7	55	31.6	+3.9	35.5	1871	19.0	1872 '85
New Jersey.									
Moorestown.....	Burlington	37.4	26	39.8	+2.4	45.4	1871	29.7	1885
South Orange.....	Essex	35.5	17	39.0	+3.5	42.5	1878	28.5	1872
New York.									
Cooperstown.....	Otsego	27.3	35	31.4	+4.1	37.2	1871	18.3	1885
Palermo.....	Oswego	27.0	29	31.8	+4.8	38.1	1878	17.1	1885
North Carolina.									
Lenoir.....	Caldwell	45.5	15	47.6	+2.1	51.6	1878	35.1	1877
Ohio.									
N'th Lewisburgh.	Champaign	37.6	57	42.1	+4.5	48.0	1842	21.0	1843
Wauseon.....	Fulton	30.6	20	37.2	+6.6	43.2	1878	24.5	1885
Oregon.									
Albany.....	Linn	47.0	9	52.7	+5.7	53.0	1885	40.4	1880
Eola.....	Polk	45.2	19	51.7	+6.5	54.2	1884	38.6	1880
Pennsylvania.									
Dyberry.....	Wayne	28.4	24	33.3	+4.9	36.9	1878	19.5	1885
Grampian Hills.....	Clearfield	30.3	24	36.0	+5.7	40.4	1878	20.1	1885
Wellaborough.....	Tioga	30.8	9	35.4	+4.6	37.6	1882	22.4	1885
South Carolina.									
Statesburgh.....	Sumter	53.0	8	52.2	-0.8	59.0	1882	48.3	1885
Tennessee.									
Austin.....	Wilson	47.3	18	51.2	+3.9	57.3	1868	40.8	1876
Milan.....	Gibson	47.0	6	50.2	+3.2	50.2	1887 '89	43.7	1885
Texas.									
Fort Concho.....	Tom Green	58.5	16	57.2	-1.3	63.9	1879	51.8	1888
New Ulm.....	Austin	62.6	16	59.9	-2.7	68.4	1879	57.3	1888
Vermont.									
Strafford.....	Orange	25.6	16	32.6	+7.0	33.8	1878	17.2	1883
Virginia.									
Bird's Nest.....	Northampton	45.2	20	43.2	-2.0	54.1	1878	35.8	1872
Wytheville.....	Wythe	42.4	24	43.8	+1.4	49.0	1878	37.0	1870 '81.
Wisconsin.									
Madison.....	Dane	29.9	24	37.1	+7.2	37.1	1889	23.2	1888
Washington.									
Fort Townsend.....	Jefferson	44.5	16	49.4	+4.9	50.7	1885	38.7	1880

MAXIMUM AND MINIMUM TEMPERATURES.

The highest temperature reported was 90°, at Yuma, Ariz. Within a limited area in the middle Sacramento valley, in western California south of the thirty-seventh parallel, in the Colorado Valley to southern Nevada, in southern Arizona and New Mexico, a greater portion of Texas, northern Louisiana, southern Arkansas, northern Mississippi and Alabama, southwestern Tennessee, northeastern Florida, and southeastern Georgia the temperature rose above 80°. The lowest maximum temperature, 49°, was noted at Block Island, R. I. At a number of stations in the more northern districts the highest temperature recorded during the periods of observation was reported. At Eastport, Me., with a record of sixteen years, the maximum temperature for March, 1889, was 1° above the highest previous reading for the month, which occurred in 1878; at Columbus, Ohio, 11 years record, 1° above maximum of 1886; Duluth, Minn., 17 years record, 2° above maximum of 1878 and 1879; Moorhead, Minn., 9 years record, 9° above maximum of 1886; Saint Vincent, Minn., 9 years record, 21° above maximum of 1881; Fort Buford, Dak., 11 years record, 2° above maximum of 1879 and 1882; Fort Assinaboine, Mont., 9 years record, 2° above maximum of 1885; Linkville, Oregon, 6 years record, 2° above maximum of 1887; Fort Canby, Wash., 6 years record, 2° above maximum of 1885; Olympia, Wash., 12 years record, 3° above maximum of 1885; San Francisco, Cal., 19 years record, 1° above maximum of 1887. Over the southern portion of the country the maximum temperature was below the maximum reported for the corresponding month of previous years by

values varying from 5° at Charlotte, N. C., to 12° at Galveston, Tex., and 19° at San Diego, Cal.

The lowest temperatures were reported in northern Minnesota and Dakota, and northeastern Montana, where they fell below 0° (zero), the lowest reading, -9 being noted at Saint Vincent, Minn. The highest minimum temperature reported was 60°, at Key West, Fla. Unusually low temperature has not been reported, and at a large majority of stations the minimum readings were considerably above the lowest values previously noted for March, notably in New England, the Lake region, the Missouri valley, and the northern slope of the Rocky Mountains, where, at stations, the readings were 30°, or more, above the lowest March values of previous years.

RANGES OF TEMPERATURE.

The greatest and least daily ranges of temperature at regular stations of the Signal Service are given in the table of miscellaneous meteorological data. The greatest monthly ranges occurred over northern Minnesota and Dakota, and northeastern Montana, where they exceeded 70°. From this region the ranges decreased eastward to the south New England coast, where they were less than 30°, southeastward to southern Florida, where they were less than 20°, and westward to the Pacific coast, where they amounted to less than 30° along the coasts of Washington and northern California. Within a limited area, embracing the north-central part of Indian Territory and adjoining portions of Kansas, the monthly ranges were about 60°.

The following are some of the extreme monthly ranges:

Greatest.		Least.	
Poplar River, Mont.	79.0	Key West, Fla.	19.0
Saint Vincent, Minn.	78.0	Tatoosh Island, Wash.	21.0
Moorhead, Minn.	70.0	Block Island, R. I.	25.0
Fort Supply, Ind. T.	61.0	Eureka, Cal.	27.0
Fort Elliott, Tex.	59.0	Galveston, Tex.	28.0
Wichita, Kans.	58.0	Hatteras, N. C.	28.0

TEMPERATURE OF WATER.

The following table shows the maximum, minimum, and mean water temperature as observed at the harbors of the several stations; the monthly range of water temperature; and the mean temperature of the air for March, 1889:

Stations.	Temperature at bottom.				Mean temperature of air at the station.
	Max.	Min.	Range.	Monthly mean.	
Canby, Fort, Wash.....	54.8	48.5	6.3	50.9	51.2
Cedar Keys, Fla.....	75.3	53.0	22.3	64.5	60.1
Charleston, S. C.....	61.1	49.0	12.1	55.0	55.0
Eastport, Me.....	37.6	36.0	1.6	36.8	33.0
Galveston, Tex.....	62.0	55.5	6.5	59.0	60.0
Key West, Fla.....	76.2	66.7	9.5	72.5	69.4
New York City.....	39.8	32.9	6.9	36.6	41.5
Pensacola, Fla.....	63.0	56.4	6.6	59.9	58.8
Portland, Oregon.....	54.5	41.0	13.5	49.7	53.8

FROST.

Frost destructive to vegetation was not reported south of the thirty-fifth parallel. In the south Atlantic states frost was not noted along, or near, the coast line, and the most southerly station reporting frost in that district was Quitman, Ga. In the Gulf states frost was reported as far south as the latitude of New Orleans, La., on five dates in Louisiana, and in Texas on three dates, at New Ulm. On the Pacific coast frost was frequently noted in Washington and Oregon. In California Sacramento was the only station reporting frost, where it occurred on the 19th.

LIMITS OF FREEZING WEATHER.

The southern and western limits of freezing weather for March, 1889, are shown on chart v. A line representing the southern limit is traced from north of Hatteras, N. C., southward to central Georgia, thence westward through central

Alabama and Mississippi to the Mississippi River, where it recurs northward to Tennessee, and from thence trends west-southwest to the Rio Grande Valley. A line showing the western limit of freezing weather is traced irregularly north-westward from southeastern Arizona to the Oregon coast, where it curves eastward over the valley of the Columbia River, and is continued northward between Port Angeles and Tatoosh Island, Wash.

As compared with the lines representing similar data for February, 1889, it is shown that for the current month the limit of freezing weather was about ten degrees farther north on the Atlantic coast, and from five to ten degrees farther north in the Gulf states. On the Pacific coast there was a general and marked advance eastward of the limit of freezing weather, the coast of western Oregon being the only region where the temperature fell below 32°.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for March, 1889, as determined from the reports of nearly 2,000 stations, is exhibited on chart iii. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for each Signal Service station. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The greatest precipitation in March, 1889, occurred at interior stations in California north of the thirty-eighth parallel, where it amounted to more than ten inches. No monthly rain-falls to exceed eight inches were reported east of the Pacific slope. Over the eastern portion of the country the greatest amount of precipitation was noted at stations on the Virginia coast, in eastern Maryland, southern Delaware, southern New Jersey, the southern extremity of Florida, in central and north-eastern Arkansas, and southern Mississippi, where it amounted to more than six inches. Over a large portion of the upper lake region and the upper Mississippi and Missouri valleys the monthly precipitation was less than one-half inch, while at stations on the southeastern and middle slopes and the western part of the middle plateau region of the Rocky Mountains the amount varied from .00 to one-half inch.

The precipitation was above the normal in California south of the fortieth parallel, in Montana and northeastern Minnesota, southwestern Missouri, southern Kansas, Arkansas, and thence southwestward to the Gulf coast and westward to the Pacific, except within an area extending over parts of western Texas, southern New Mexico, and southeast Arizona, over southern Florida, along the Atlantic coast from Atlantic City, N. J., to the lower South Carolina coast, except at Hatteras and Kitty Hawk, N. C., and over a part of the northern plateau region. The greatest departures above the normal occurred over the southern extremity of Florida, where they amounted to more than six inches, and along the west-central coast of California, and in central Arkansas, where they were more than four inches. The precipitation was generally below the normal from New England westward to the Pacific, and from the Lake region southward to the Gulf of Mexico, the greatest departures below the normal being reported in north-western Georgia, southwestern Alabama, and northwestern Oregon, where they exceeded four inches.

In the several districts where the precipitation was in excess the percentages above the normal were about as follows: middle Atlantic states, 5 per cent.; Florida, 93 per cent.; Rio Grande Valley, 117 per cent.; west Gulf states, 20 per cent.; middle slope, 50 per cent.; southern slope, 4 per cent.; southern plateau, 9 per cent.; northern plateau, 30 per cent.; middle Pacific coast, 137 per cent.; southern Pacific coast, 107 per cent. In the districts where the precipitation was deficient the percentages of the normal were about as follows: New England, 60 per cent.; south Atlantic states, 85 per cent.; east Gulf states, 66 per cent.; Ohio valley and Tennessee, 50 per cent.; lower lake region, 60 per cent.; upper lake region, 40 per cent.; extreme northwest and upper Mississippi valley, 50 per cent.; Missouri Valley, 97 per cent.;

northern slope, 75 per cent.; middle plateau and north Pacific coast, 70 per cent.

Chart iv exhibits the normal distribution of precipitation for March as determined from eighteen years' observations. This chart shows that the heaviest precipitation for the month occurs in the extreme northwest part of Washington, where it commonly exceeds ten inches. It averages eight inches, or more, in parts of western Washington and Oregon, northeastern and southwestern California, and northern Mississippi. The greatest average amount of precipitation in the Rocky Mountain regions is shown in limited areas located in north-central Colorado and south-central Utah, where it amounts to four inches, or more. Over a considerable portion of the Rocky Mountain districts the precipitation for March falls below one-half inch.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for a series of years; (2) the length of record during which the observations have been taken, and from which the average has been computed; (3) the total precipitation for March, 1889; (4) the departure of the current month from the average; (5) and the extreme monthly precipitation for March during the period of observation and the years of occurrence:

State and station.	County.	(1) Average for the month of March.	(2) Length of record.	(3) Total for March, 1889.	(4) Departure from average.	(5) Extreme monthly precipitation for March.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
<i>Arkansas.</i>		<i>Inches</i>	<i>Years</i>	<i>Inches</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	
Lead Hill.....	Boone.....	3.75	7	3.61	-0.14	4.87	1886	2.84	1887
<i>California.</i>									
Sacramento.....	Sacramento.....	2.87	39	7.20	+4.33	10.00	1850	0.09	1885
<i>Colorado.</i>									
Fort Lyon.....	Bent.....	0.41	15	0.64	+0.23	1.87	1868	0.00	1879
<i>Connecticut.</i>									
Middletown.....	Middlesex.....	4.64	27	2.55	-2.09	9.49	1876	1.12	1874
<i>Florida.</i>									
Merritt's Island.....	Brevard.....	2.92	11	1.03	-1.89	7.92	1878	0.76	1882
<i>Georgia.</i>									
Forsyth.....	Monroe.....	7.51	15	2.48	-5.03	12.87	1875	1.37	1878
<i>Illinois.</i>									
Peoria.....	Peoria.....	2.57	34	1.50	-1.07	5.82	1859	0.24	1885
Riley.....	McHenry.....	2.67	38	1.56	-1.11	7.23	1876	0.29	1885
<i>Indiana.</i>									
Logansport.....	Cass.....	3.13	14	1.51	-1.62	6.89	1861	0.95	1856
Vevay.....	Switzerland.....	3.89	24	0.85	-3.04	6.30	1882	0.65	1889
<i>Iowa.</i>									
Cresco.....	Howard.....	1.91	17	0.22	-1.69	4.55	1888	0.22	1889
Monticello.....	Jones.....	2.59	34	0.15	-2.44	6.54	1877	0.07	1869
Logan.....	Harrison.....	2.12	21	0.69	-1.43	4.50	1876	0.30	1885
<i>Kansas.</i>									
Lawrence.....	Douglas.....	2.29	21	2.30	+0.01	5.47	1888	0.37	1879
Wellington.....	Sumner.....	1.24	10	2.97	+1.73	2.97	1889	0.00	1879
<i>Louisiana.</i>									
Grand Coteau.....	St. Landry.....	5.92	6	3.69	-2.23	10.20	1884	2.28	1887
<i>Maine.</i>									
Cornish.....	York.....	4.13	32	3.17	-0.96	9.63	1859	1.42	1874
<i>Maryland.</i>									
Cumberland.....	Allegany.....	2.71	17	3.52	+0.81	5.14	1884	0.50	1872
<i>Massachusetts.</i>									
Amherst.....	Hampshire.....	3.46	53	1.02	-2.44	7.14	1876	0.89	1858
Newburyport.....	Essex.....	3.96	10	3.20	-0.76	6.83	1881	0.96	1885
Barnstable.....	Bristol.....	4.83	16	2.74	-2.09	9.43	1877	1.14	1885
<i>Michigan.</i>									
Kalamazoo.....	Kalamazoo.....	2.57	13	1.84	-0.73	7.33	1877	0.42	1883
Thornville.....	Lapeer.....	2.56	12	0.71	-1.85	4.67	1877	0.71	1889
<i>Minnesota.</i>									
Minneapolis.....	Hennepin.....	1.86	23	1.07	-0.79	9.00	1868	0.32	1883
<i>Montana.</i>									
Fort Shaw.....	Lewis & Clarke.....	0.46	18	0.34	-0.12	1.05	1883	0.04	1873